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Interpretation of the top quark mass parameter in Monte Carlo samples at NNLL precision

We provide a quantitative interpretation for direct top quark mass measurements in terms of a field-theoretic mass scheme. A relation between the top quark mass parameter in Monte Carlo generators and the MSR mass at a scale of $R = 3$ GeV is derived. This is achieved by fitting Monte Carlo templates for the simulated jet mass distribution of large-radius jets containing a hadronically-decaying top quark of large transverse momentum with a first-principles, hadron level calculation at NNLL accuracy. The result confirms that the MC mass parameter is numerically close to the MSR and pole masses.

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